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ADDRESS
TO THE
ROYAL GEOGRAPHICAL SOCIETY
OF LONDON;

Delivered at the Anniversary Meeting on the 25th May, 1840,

BY

GEORGE BELLAS GREENOUGH, Esq., F.R.S.,
PRESIDENT.

GENTLEMEN,

IN discharge of that duty which the example of my learned and able predecessor has happily rendered imperative on all after-occupants of this chair, I am now to address you on various subjects which appear deserving of attention, as connected with the occasion on which we are met and with the condition in which the Society finds itself at the present moment.

And, first, let me congratulate you on the favourable report which the Council has this day laid before you on the state of our finances. I may also congratulate you on the rapid augmentation of our library, to which has been added 540 volumes and 680 sheets of maps and charts. For many of these works the Society is indebted to the Board of Ordnance, the Hydrographic Office, to the Lord Lieutenant of Ireland; to various foreign academies, as Paris, St. Petersburg, Berlin, Lisbon, Copenhagen, Philadelphia, &c.; to the Dépôts de la Guerre et de la Marine in France; but more especially to the munificence of His Majesty the King of Bavaria, who has presented to us the Topographische Atlas of that kingdom in 100 sheets.

The government maps of the Duchy of Salzburg in fifteen sheets, and of Austria Proper in thirty, have been added to our collection by Mr. Löwenstern, from whom we have also received within these few days a map of Styria and Illyria in thirty-six sheets, presented by Mr. Killmann of Vienna.

The Chevalier Brönsted has lately procured for us all the maps published by the Royal Danish Society of Sciences.

Colonel Visconti has sent us the map of Sicily, by Marzolla. Mr. Vandermaelen kindly supplies the Society with a copy, as soon as it appears, of every work published at his extensive establishment; among which we may particularly mention a plan of the city of Brussels, executed by Mr. Craan, in four sheets, on the scale of $\frac{1}{25000}$, or about 30 inches to a mile. Professor Schouw has presented to our library his *Tableau du Climat de l'Italie*, a work which I shall have occasion to notice hereafter.

While I mention as a further topic of congratulation the steady increase which has taken place in the number of our members, I cannot be unmindful how heavily the hand of death has pressed upon us during the past year. Among the geographers whom we regret, though not one of our fraternity, I may mention James Prinsep, secretary of the Asiatic Society in Bengal; a man of very active habits and extensive attainments. The journal which he conducted for many years, and which abounds in valuable information on all subjects connected with the East, more especially geographical subjects, will be a lasting memorial of his unwearied industry and research. The close attention which he paid to literary and scientific pursuits no doubt impaired his constitution, and I am afraid shortened his life.

Admiral Klint, of the Swedish navy, died at Stockholm in advanced age. His hydrographic labours, applied principally to the coasts of his native country, are generally known and highly appreciated.

Ziwolka, a master-pilot in the Russian navy, well known to you as the explorer of the coast of Novaia Zemlia, died during the late Russian expedition to that country.

Within our more immediate circle, we have to regret the loss of Lieutenant-General Sir Alexander Dickson, an officer who served with great distinction in the peninsular war, and was a very zealous member of our council.

The name of Allan Cunningham will bring to your recollection one of the earliest explorers of Australia, and one of the most successful. In the course of a botanical excursion which he made in New Zealand he exposed himself too fearlessly to dangers, and contracted the disorder which terminated his life. He died at Sydney.

Thomas Drummond, a captain in the royal engineers, who was engaged during the latter part of his life almost exclusively in the arduous duties of his official situation as under-secretary in Ireland, was at an earlier period no less zealous in the pursuit of science: while employed

on the trigonometrical survey of England he made great improvements in the heliostat, and, by his striking and beautiful invention of the Drummond light, has rendered an important and lasting service to geodesy.

Lastly, I beg leave to call from you a passing tribute of regret to the late venerable father of some branches of natural history, I. F. Blumenbach. It is more than forty years since my immediate predecessor in this chair and myself were fellow-listeners to his luminous and singularly attractive lectures on comparative anatomy. He it was who first inspired me with a love of natural history. My fortunate introduction to that great and amiable man gave an entirely new direction to my studies, and decided the destiny of my after-life. I trust, therefore, that I may be excused for speaking of him with more than ordinary interest. Blumenbach occupied the professor's chair in the university of Göttingen more than fifty years, and during that period no man had a greater share in promoting the successful study of physiology and natural history, not in Germany alone, but throughout entire Europe. He was the earliest writer who founded zoological classification on the basis of comparative anatomy, and taught naturalists to derive their groups and families from an examination of the whole structure of animals, and more particularly of those organs upon which the most important habits of each tribe depend. He thus marked out the path which Cuvier afterwards travelled with such distinguished success, and anticipated him in many of his conclusions. In ingenuity and almost intuitive insight the character of his mind approached nearly to that of an eminent philosopher in our own country, of whom he was accustomed to speak in terms of the highest admiration—I mean John Hunter. Blumenbach might indeed be called, not inaptly, the John Hunter of Germany. His essay on the *Nisus formativus* comprises certain imaginative and speculative views, which may perhaps have suggested a part of the theories since broached in the school of Geoffroy St.-Hilaire; but his works on anthropology and ethnography are more nearly connected with our pursuits, and, independently of that circumstance, have higher claims to our regard. Blumenbach was the first naturalist who, in direct opposition to Linnæus, drew a broad and well-marked line of division between the genus *homo* and the genus *simia*, laid down correctly the physiological differences between the two, and thus effectually vindicated the dignity of mankind. He too was the first who, upon the broad basis of well-established observations, separated the human species into varieties. With this design he had at an early period formed the first series ever made, of any value or extent, of native crania collected in different parts of the world, and he ascertained by careful examination of these the leading characters which distinguish

the European head, the African, and that of the native of eastern Asia respectively; to these, which he regarded as the principal varieties, he added two intermediate races for the natives of Polynesia and those of the New World, making in all five divisions of mankind. These divisions, however, he considered only as particular types to which the crania of various other tribes and nations approximate; whereas Cuvier, and other writers who adopt the system in general, consider them to be permanent and indelible. Professor Blumenbach reached the advanced age of eighty-eight.

I had the satisfaction, on the first evening in which I occupied this chair as your president, to notify to you that the Council had at length succeeded in obtaining a more comfortable set of apartments than those in which the business of the Society had been before transacted. Many, I would fain say all of you, have witnessed the improved accommodation provided for the members, not only for consulting the contents of our library, but also for studying, copying, or constructing maps. The facility with which our books are lent out on proper application to the individual members of the Society has, I am happy to say, been attended with no inconvenience.

Our new abode does not contain an apartment large enough for the reception of the general meetings, but by the liberality of the Horticultural Society we are enabled still to occupy upon these occasions the room in which we are now assembled.

You have been informed in the report of the Council that the Patron's Medal for the year 1839 has been awarded to Mr. R. H. Schomburgk, for his perseverance and success in exploring the territory and investigating the resources of the colony of British Guayana, and a large tract of the continent of South America immediately adjacent.

In November, 1834, Mr. Schomburgk was engaged by this Society to explore the interior of British Guayana, and afterwards to connect his astronomical observations with those of Baron Humboldt on the Upper Orinoco. His reports upon the colony have appeared from time to time in the Journal, and your attention was particularly called to his progress by my predecessor in his annual addresses in 1838 and 1839. Within these few days Mr. Schomburgk has further published a description of British Guayana, geographical and statistical, exhibiting the resources and capabilities of that valuable colony. These several publications are replete with valuable information in respect of a large extent of country belonging to the British Crown hitherto unknown. Having completed his examination of the great water-courses and phy-

sical geography of that region, in the winter of 1838-39 Mr. Schomburgk proceeded westward, to execute the ulterior object of the Society, and to connect his positions with Esmeralda, the most easterly point determined by Baron Humboldt in 1800: to do so, he had to traverse 700 miles of a country never yet trodden by any European, so far as we know; an attempt in which he suffered greatly from fever, fatigue, and privation of every kind. For the details of this important journey I must refer you to the forthcoming Part of the Geographical Journal; but I cannot omit to call your attention to the unwearied perseverance and undaunted zeal with which this gentleman has carried out the plan of the Council, and accomplished to the fullest extent the interesting objects which the Geographical Society originally contemplated in employing him.

The map of the country which he has explored, and which is now published by the Society, is the best index of his labours in your service; it has drawn forth the praises of the first geographer of modern time—I cannot doubt but it will receive yours: nor has this improvement in the physical geography of British Guayana, and so large a portion of the adjoining districts, been the only fruit of Mr. Schomburgk's labours. Ethnography, botany, and zoology, have received from him contributions of great interest, which have proved him to be a traveller of no ordinary accomplishments.

The Council, as already mentioned, have deemed Mr. Schomburgk's labours worthy of the highest reward it is in their power to bestow. They have awarded him the Patron's Medal for the year 1839. And it may be satisfactory to the Society to be informed that in such estimation are this gentleman's labours held by Her Majesty's government, that they have selected him, as I understand, to return to Guayana, in order to undertake the important and delicate task of laying down the boundaries of the British possessions in that part of South America—a measure the necessity of which his own observations have forcibly shown, if the sovereignty of Great Britain is to be asserted as it ought to be, and if the defenceless natives are to be duly protected from the savage inroads of the slave-traders of Brazil. That the reduction of those tribes to Christianity and civilization is well worthy the attention of an enlightened government I need not say, nor that the consequences thereof will be of the first importance to the neighbouring colony, where the want of a labouring native population is acknowledged to be the only drawback to its more rapid advancement. If such should be among the fruits of Mr. Schomburgk's travels, the Society will have additional grounds for self-gratulation.

You have also been informed that the Founder's Medal has been awarded in like manner to Major Henry Creswicke Rawlinson, in testimony of the services he has rendered to geography by his researches in Susiana and Persian Kurdistan, and for the light thrown by him on the comparative geography of those regions. Major Rawlinson is a distinguished officer in the Bombay army, who, at the request of the Persian government, has for many years been quartered in Persia and intrusted with the command of a corps of cavalry. The papers which entitle him, in the judgment of the Council, to this public testimony of your gratitude and respect, and which have appeared in the IXth and Xth volumes of our Journal, are the result of the information he was enabled to procure, either in his marches through that country, or in the course of his travels when not professionally employed. The area described comprehends the provinces of Kermanshah, Luristan, and Khuzistan.

In those parts of his memoirs which are most strictly geographical the author has traced both with the pen and pencil two important routes, which never before were inserted on any map, or visited by any European. The one is the shortest and most direct line of communication between the towns of Bisitun and Dizful; the other runs from Nineveh to Ecbatana, and extends under the mountain-ridge of Pushti-kuh to the river which is now called Sefid Rud, formerly the Amardus. The physical features of the country in the neighbourhood of these routes are clearly and, no doubt, accurately detailed.

These are the principal additions which the author has made to the stock of positive geography, the most important of all the branches of geography, but by no means the only one which it becomes us to cultivate and support. Let it be remembered that no inconsiderable share of the reputation of Rennell and of Vincent, and, I may add, almost the whole reputation of D'Anville, rests upon the erudition, sagacity, and critical acumen displayed in their respective attempts to reconcile to the natural and necessary conclusions of modern experience the obscure, ambiguous, and often contradictory records of early history, and still more early tradition.

In the person of this gallant officer we find united to the sterner qualification of a geographer the accomplishments of the scholar, the antiquarian, and the man of taste. Familiar with all the accounts that had appeared either in ancient or modern times in regard to the region which he was about to explore, equally conversant with dead and with living languages, observation and erudition acted reciprocally upon his mind, sometimes exciting, sometimes restraining the speed

with which he pressed onwards to his conclusions; to form a just estimate of his merit we must look not only to the termination of his labours, but to the severe self-discipline he underwent lest he might not feel qualified to commence them.

Major Rawlinson has proved, 1. That the ancient Choaspes and Eulæus rivers were not, as hitherto supposed, one and the same, but two distinct rivers; the former, now called Kerkhah, taking its rise in Kermanshah; the other, now called Kuran, in Khuzistan.

2. After a careful examination of the traditions, names, physiognomy, and religion of the wandering Guruns and Iliyats, he is of opinion that these Persian tribes are descendants of the Jews of the Samaritan captivity.

3. On the south of the Kuran, in Khuzistan, is situate Elymais, a province which rose to great opulence and prosperity after its conquest by Alexander. On the fire-temples in Elymais he has communicated to us much historical information, and hesitates not to identify the ruins which he there visited with those temples which attracted the cupidity of the Syrian and Parthian kings.

4. He has treated with great erudition, but only partially, the difficult question as to the successive capitals of Susiana: the similarity of their names, he thinks, has caused them to be confounded one with another. There would appear to have been three capitals. 1. Susan, or Susa, the Shustan of Scripture, near the Kuran River (Eulæus). 2. Sus, or Susa, of Herodotus, near the Kerkhah (Choaspes). 3. Shapûr and Shuster on the Kuran. His more detailed evidence on this subject will be brought forward in a separate work.

5. The author in his second memoir traces the march of Cyrus, Ptolemy, and Heraclius; he also describes various tribes on the east and south of Lake Urumiyah, and makes us acquainted with their history, manners and customs, superstitions, the relations which exist among these tribes, and the acknowledgment by each of a different chief.

In a supplementary memoir of great erudition, and in which Major Rawlinson exhibits very considerable power of conducting a long argument on the several bearings of historical and geographical data, he demonstrates that the Ecbatana of Dejoces, the founder of the Median empire according to Herodotus, was the capital not of Media Magna, but of Media Atropatene, situate 100 miles off to the N.E.,—that it was not at Hamadan but in Azerbaijan, where the ruins of the Ecbatana of Dejoces may still be seen at Takhti Suleïman, exhibiting to a critical eye various local peculiarities which he considers undeniable proofs of this further verification of Armenian or Perso-Armenian geography.

EUROPE.—While the announcement of discovery in remote parts of the world excites in us those pleasurable feelings which always accompany the first appearance of daylight, we are apt to view with heedlessness and indifference the constant but gradual enlightenment which is thrown over civilised countries by the rectification of slight errors, by the accumulation of new observations, the completion of imperfect data, and the announcement of improved methods of conveying accurate information.

British Isles.—In England the ordnance survey has reached as far north as a line drawn east and west from Hull to Preston. The whole work will consist of 110 sheets; of these seventy-eight are published, seven are engraving, and five are still in the hands of the surveyors.

In Scotland the principal triangulation has been carried from the eastern coast westward to the island of Lewis, in the northern part of the Hebrides.

The townland survey of Ireland advances rapidly to its completion: it has already extended to every part of that kingdom with the exception of the counties of Cork and Kerry. Whether we consider the extent of this undertaking or its execution, it may safely be pronounced the most valuable work of the kind which has ever been devised. It is engraved and published on the scale of six inches to a mile, and will occupy nearly two thousand sheets: the plans of the towns are drawn on a scale one hundred times greater than that just mentioned. No fewer than 2000 persons are employed on this survey, and it is difficult to praise too highly the organisation of this vast establishment.

The hydrographic surveys under the direction of the Admiralty keep pace with the land surveys of the Board of Ordnance.

The river Thames and the great shoals and channels at its entrance have undergone thorough examination by Captain Bullock, R.N.; while more to the seaward Captain Hewett in the *Fairy* is engaged upon the survey of the North Sea, including its numerous banks between our own coasts and the entrance of the Baltic.

The survey of the east coast of England having been finished, the party under Captain Slater is now advancing to the northward along the east coast of Scotland, and is engaged on the Frith of Cromarty.

That of the Shetlands also being complete, Mr. Thomas is occupied with the not less important group of the Orkneys, where, owing to the continued wet weather, the survey is very tedious.

On the west coast of Scotland Captain Robinson is advancing towards Glasgow and to the numerous islands of the Hebrides. Further south, having completed the coast of Wales, Lieut. Sherringham is at work between the Bristol Channel and the Land's End.

Captain Beechey is engaged in the *African* steamer in the Irish Channel, of which no survey had hitherto been made to facilitate this important navigation. In the course of his examination this officer has recently discovered a circular bank with only twenty fathoms water on it, lying 13 miles S. 41° W. (true) of the Craig of Ailsa. On the east coast of Ireland the shore has been finished from Ballyshannon round by the north to Wicklow Head; and Lieut. Frazer is now about to proceed along the south-eastern shore and the Arklow Banks.

Of the navigable lakes and rivers in the interior of Ireland, the party having surveyed Lough Derg and the river to Limerick, Lieut. Wolfe and his assistant, Lieut. Beechey, are now working into Fergus Bay and the estuary of the Shannon.

The Topographic Map of France publishing at the Dépôt de la Guerre, in Paris, advances with regularity and precision at the rate of twelve sheets a-year.

The publication of an accompanying memoir, containing the entire data on which this truly national work is based, affords an example well worthy of imitation in every other country where great surveys are in progress.

It is with much pleasure I add that the French Government has decided on commencing at once a survey of the south coast of France, corresponding to those executed of the western and northern coasts. This will add a sixth volume to the magnificent work '*Le Pilote Français*,' which (thanks to the liberality of the French Government) forms one of the greatest ornaments of our library.

Several sheets have been added during the past year to the published portions of the various government surveys which are in progress throughout Europe; these it is unnecessary to particularize, but I may mention as a novelty a map of Galicia in Spain, in twelve sheets, on the scale of $1:100,000$, made under the direction of Signor Fontan, director of the Observatory at Madrid, a small index-map of which has recently been engraved at Paris by M. Bouffard. Three charts of the coast of Norway have just been published, being the first of a series resulting from a survey ordered by the Storthing to be made of the coasts of Norway and Finmark, from Trondheim to the Russian frontier.

At Brussels Mr. Vandermaelen has recently published a map of Belgium, on the scale of twelve inches to a degree, showing all the lines of railroad completed and projected within that kingdom, together with a map of Europe, exhibiting their ramifications, which reach as far as Berlin and Vienna, Florence and Pisa.

This spirited individual has further undertaken a map of Belgium in twenty-five sheets, on a scale corresponding to that which has been

adopted in France, viz. $\frac{1}{80,000}$, in which all the elevations along the lines of railroad will be accurately expressed.

Several topographical descriptions have been published during the past year: viz. of Schaffhausen, of the Grisons, of Austria and Salzburg, of Saxony and Hanover. Colonel Marinora has given us a new edition of his work on Sardinia; and we learn from our zealous corresponding member Count Gräberg of Hemsö, that Repetti's Dictionary of Tuscany goes on well and steadily towards its completion.

Messrs. Fullarton at Glasgow are publishing a Parliamentary Gazetteer of England and Wales; Mr. M'Culloch a general Geographical Dictionary; and Dr. Kriegk of Frankfort has recently sent us his work entitled '*Schriften zur allgemeinen Erdkunde*.' The Handbooks of Mr. Murray, now comprising Northern Europe, and Northern and Southern Germany, Switzerland, and Italy, are drawn up with much care, and are excellently adapted for travelling companions. We have also, in M. de Candolle's work entitled '*Heights of Mountains around Geneva*,' a list of about 800 well-ascertained points, to which our corresponding member M. Chaix has recently added about one hundred more from his own observations.

In addition to the general surveys already briefly noticed, I may mention that some of the governments of Europe have directed the construction of special surveys, or of special maps, for the elucidation of particular subjects—more especially geology.

A very elaborate geological map of France, upon which MM. Elie de Beaumont and Dufresnoy have been engaged for more than twenty years, will, it is hoped, be published in the course of the present.

The King of Bavaria, distinguished for his patronage of art and science in whatever form, has, I understand, directed a geological map of his dominions to be constructed on a scale corresponding in magnificence with his other undertakings.

In a miniature map, drawn with great skill and very distinctly coloured, M. von Dechen of Berlin has incorporated his own ideas of the geology of Germany with those of M. de Beaumont, as conveyed in the map just mentioned, and those put forth in the first edition of the map of England, published in 1820 by the Geological Society: the second edition, which differs materially from its predecessor, will be found in your library.

The geological map of Scotland, by the late Dr. M'Culloch, was among the first constructed at the expense of the public. The geological map of Ireland, which may also be considered in some degree a government work, was designed by Mr. Griffith about the same period, but

its publication was retarded for more than twenty years for want of a geographical basis which could be depended upon.

The geological survey of England now carrying on under the direction of M. de la Beche has been undertaken under still better auspices, and, if fully carried out, will certainly surpass in minuteness and accuracy of detail anything that has hitherto been achieved.

Perhaps I may be permitted to observe that, with a view to the success of enterprises of this nature, it appears to me essentially necessary that they should not be entered upon at all until the plan upon which they are to be conducted has been very maturely considered, and that, when once entered upon, that plan should be uniformly adhered to up to their termination. In reference to the geological survey of England, it seems questionable whether the whole should be conducted upon the same scale, or whether there may not be some portions of England for which such a survey is not required. Our actions should be regulated by the purpose we have in view. In the mining districts, where the objects to be laid down are very numerous and very complex, the scale cannot well be too large; whereas a very small scale would suffice for laying down the chalk on Salisbury Plain. It may also be deserving of consideration whether the ordnance map, crowded as it is with names and lines which refer only to civil or miscellaneous geography, and the hills not shaded to scale, is the proper place upon which to lay down the details, often complicated, of geological research. Many great works are stopped midway for want of due consideration at the outset.

ASIA.—The past year has not been barren in its supply of new materials towards constructing an improved yet still very imperfect map of the vast continent of Asia. The march of hostile armies, however much to be deplored, has contributed largely to the stock of our geographical knowledge respecting a part of the world which of late years has been to us almost a *terra incognita*, though formerly the seat of learning and civilisation; and we may confidently expect to obtain from the British officers attached to the mission at Kábul a large supply of information respecting Khandahar, Khandúz, the sources and fords of the Oxus, and the country of Afghanistan.

The Russian expedition to Khiva has already given occasion to several works relating to that region. One of these, from the collection of General Gens of Orenburg, has been edited by Professor Halmersen. Another work has been published by Lieutenant Zimmermann of Berlin, containing the best map we have hitherto seen of the present theatre of war. This work has already been translated into English by Captain

Morier, R.N., and is shortly, we hope, to be published with a map constructed by Mr. John Arrowsmith. For the third we are indebted to the spirited publisher Arthur Bertrand of Paris, who, besides various notices contained in his new "*Annales des Voyages*," has very opportunely given us in a French garb a description, by Alexis de Levchine, of the hordes and steppes of the Kirghiz-Kazaks.

Professor Baer, at St. Petersburg, one of our corresponding members, has recently sent us a communication on the temperature of those regions, in which it appears that in the parallel of 47° the mean temperature of the three winter months was 4° below zero, and that the mercury on one occasion descended to -40° of Fahrenheit.

According to the latest Russian calculations, the surface of the Caspian sea, before stated to be 101 English feet below the level of the Euxine, now appears to be only 81 feet. A full account of the line of levels which has lately been carried between these two seas, under the direction of the Russian government, will, it is hoped, be soon published.

Turning our attention to the north, we have now the connected and highly interesting narrative of the journey performed by Baron Wrangel along a part of the coast of Siberia in the year 1821, with an excellent chart, embracing Professor Adolph Erman's more southern route through the same country. An important statement in this publication is, that the polar basin, at the distance of 180 miles from land, was invariably free from ice; this fact, taken in connexion with the discoveries recently made on the arctic coast of America (which I shall presently have again occasion to refer to) favours the probability of a north-west passage navigable for ships, and naturally excites in us a hope that the British government may be disposed to make one more effort in order to solve a problem which for three successive centuries has so much engaged the attention of our countrymen. I have great pleasure in adding that a translation of this interesting work by Major Sabine, R.A., is now in the press—an example which I trust will not be lost to us. It is of great importance that all translations of scientific works should be executed by scientific men.

In Arabia discovery has advanced but slowly during the past year. We have received from M. Jomard a general account of what is known, or rather of what remains to be known, of that peninsula.

M. Botta, an Italian naturalist, penetrated into Yemen in 1836, following in part the route of Niebuhr in 1763, by Hodeïda, Hais, and Taas, whence he succeeded in ascending the trachytic mass of Mount Saber, on the summit of which, at an estimated elevation of 7000 feet, he found large ruins called Hasn al Arús, or "Wife's Castle."

The chart of the south coast of Arabia, by Captain Haines and the officers of the *Palinurus*, from Bab-el Mandeb to Misenat in $50^{\circ} 43' E.$, is now published on a large scale, together with plans of all the ports. In noticing this valuable gift rendered to navigators, we may perhaps be permitted to add an expression of regret that the Court of Directors of the East India Company, to whose liberality we are indebted for this survey, should have found reason to suspend the work before completion. Three vessels employed for one season more would connect Misenat with the Persian Gulf, and thus complete the outline of the whole of the Arabian peninsula.

The sailing directions for the Red Sea which have just been published furnish also some very valuable notices on the western coast of Arabia; nor, while speaking of the labours of the officers of the Indian navy, can I omit to mention the recently published chart, by Captain Moresby and Lieutenant Powell, of the Maldivas and Chagos archipelago, on which are delineated, upon the scale of 1 inch to a mile, all the features of these remarkable coral formations.

Mr. Christopher, who accompanied Captain Moresby in his survey, and resided for some time on one of the islands, has published a vocabulary of some extent of the Maldiva language.

Of the survey of British India, the materials for completing the maps of Sulapúr, Haider-abád, and the collectorate of Ganjam, have reached this country, and the sheets 57, 75, and 107 of the Indian Atlas will be published in the course of the year.

Further east, the survey of the coast from the mouth of the Hooghly to the eastward as far as the province of Chittagong, usually known as the "Sea-face" of the Sunderbunds, has by this time been completed by Captain Lloyd, I. N. This officer has also brought to a conclusion the examination of the Mergui archipelago and the coast of Tenasserim left unfinished by Captain Daniel Ross, now President of the Bombay Geographical Society, and to whom oriental hydrography is so much indebted. The interior of the province of Tenasserim has been explored by Dr. Helfer, whose able report on the British province of Amherst, which forms the northern portion of Tenasserim, is arranged under the following heads, viz. :—1. Physical and geological structure of the country. 2. Mineralogical productions. 3. Agriculture and improvements in agriculture with regard to colonisation. 4. Vegetable productions. The natural resources of that country would appear to be very considerable.

Dr. Richardson has given us several routes from Múlmein to Lalong, to Zimmi (the Changmai of our common maps), and Amarapúra. Captain McLeod has gone to the Chinese frontier at Hang-hang, besides which we have the route of the missions lately sent from Múlmein to the capital of Siam.

Farther northward we have Captain Hannay's sketch of the Irawádi above Amarapúra, and of the Hu-kong valley celebrated for its supply of amber. The valuable maps and report of Captain Pemberton on the N. E. frontier of India were alluded to in last year's address; and we have just received an apparently equally valuable report on Bútan, which that officer visited by a new route in 1838.

The only additional information with respect to Cochin-China is derived from the map of the Bishop of Isauropolis, given in the "*Bengal Asiatic Journal*," principally valuable on account of the political divisions of the country marked upon it.

A map of Upper Assam, lithographed by Mr. Tassin at Calcutta, has lately reached this country. It shows all the tea localities and the recent political changes in a district whose importance to our national and commercial interests is daily increasing. Mr. Tassin has for several years been engaged in constructing a map of Bengal Proper, comprehending the country from Allahabad to Manipúr, on a scale of 8 miles to an inch: this map, we learn from Mr. J. Fergusson, may daily be expected in England, and will be peculiarly interesting, as showing all the extraordinary changes that have taken place in the course of the rivers of the Delta of the Ganges since Rennell's survey was made.

Still farther east the rumour of war (which it is to be hoped may be avoided) has been productive of a new set of maps of the whole of the sea-coast of China, from the Gulf of Siam to Corea, in 17 sheets, engraved and published at the Hydrographic Office, in a very short space of time, to meet the exigency of the occasion, compiled from all available sources, either printed or in MS., and embodying all that is known of those shores, a complete survey of which is still a great desideratum in hydrography.

Von Siebold's great work on Japan proceeds, though slowly, in Holland; and a French translation of it has been published by Bertrand in Paris. Our Journal has been enriched by an analysis of it by Dr. Prichard; and you will be gratified to learn that this gentleman, already well known to you by the two first volumes of his excellent work '*Researches into the Physical History of Mankind*,' has just completed his third volume, comprising the *Ethnography of Asia and Europe*, which will be published in the course of this summer.

We still look for Professor Adolph Erman's third volume of his '*Reise um die Erde*,' which will contain an account of the remarkable Peninsula of Kamchatka, for a beautiful map of which we are already indebted to him.

Returning to the westward, we have now a published account of Sir W. Lloyd's journey in 1822 from Khánpor to the Burandú Pass in

the Himálaya Mountains, and a republication of a portion of the routes of the well-known and excellent travellers the three brothers Gerard, who about the same time visited the Shatúl and Burendú Passes; and that of Captain A. Gerard, in his attempt to reach Garú, on the Indus, in 1829. Deploring, in common with all geographers, the early death of two of these persevering explorers of the Himálaya Mountains, we may be permitted to express a hope that the survivor, Captain P. Gerard, will, in justice to the memory of his brothers, give to the world a complete and connected account of their various journeys, which are now only to be found scattered through the "*Asiatic Researches*," and other scientific journals.

In the same region, but more to the N.W., we have recently had the gratification within these walls of hearing Mr. G. T. Vigne give an animated description of his journey through the Panj-ab, Kábul, Kashmír, and into Little Thibet, illustrated by some beautiful sketches and panoramic views of the city of Kabúl and the valley of Kashmír. Mr. Vigne has been one of the few European travellers who have ever accomplished the difficult task of penetrating to Iskardoh. The author's published volume on Kábul contains much information of peculiar interest at this time, when we have been obliged to take so active a part in respect to the disturbed state of those countries; but the geographer will look forward with still greater interest to an account of a journey into Thibet, which, it is to be hoped, Mr. Vigne will soon lay before the public.

Mr. Asher, of Berlin, has rendered good service to geography by giving us a new English translation of the travels of Rabbi Benjamin, of Tudela, through parts of Europe, Asia, and Africa, in the year 1173, which seems valuable.

The *revenue* surveys, which have been for many years in progress in the north-western provinces of India or presidency of Agra, would afford materials for the construction of an excellent map of that country, if properly digested. None of these are yet, however, in the hands of the public.

Captain Paton, late deputy quartermaster-general at Nemuch, has recently surveyed a considerable portion of Rajputana, and constructed a map on the scale of 4 miles to an inch; but no copy has, we believe, reached this country.

The course of the Indus, from Mittun to Attak, has been surveyed and mapped upon a large scale by Sir Alexander Burnes and Lieutenants Wood, Leach, and Mackeson, who accompanied the mission to Kábul. Mackeson continued the survey into Kashmír, and Burnes and Wood carried it westward; but the present peaceable occupation of the countries of Kábul and Afghanistan will, I have no doubt,

lead to a much better acquaintance with their geography, if not to an actual survey.

The mouths of the river Indus, being constantly liable to change in a soft alluvial soil, have recently been re-examined preparatory to the publication of a chart of the entrances on a large scale. The rapid extension of our commerce in this direction will shortly tend to make this great boundary of Western India the high road of nations, and lead to the exploration of its sources, hitherto concealed from our knowledge ; but on this subject I must mention the very remarkable statement lately made by Lieutenant Wood, I.N., founded on his late examination of the Indus, that this river is not generally navigable by steam-vessels having more than thirty inches draft of water.

The source of another river famous in ancient history, the Oxus or Amú of the moderns, has been reached by this young officer. It is found in a lake about 14 miles long from E. to W., in the plateau of Pamír, at an elevation of upwards of 15,000 feet above the level of the sea, and, as nearly as we can judge from calculations not yet accurately worked out, in lat. $37^{\circ} 27' N.$, long $73^{\circ} 40' E.$ The perseverance and intrepidity of Mr. Wood in pushing on in spite of all obstacles, and over ground covered with snow, deserves our warmest applause.

Proceeding a little further west, we approach a country that has recently been explored by a traveller of no ordinary mind. I need hardly say that I allude to Major Rawlinson's researches in the countries of Khuzistan, Luristan, and Azerbiján, a full abstract of which I have already had the gratification of laying before you in noticing the award of our Founder's Medal for 1839.

We have not yet been able satisfactorily to ascertain the truth of the reported depression of the level of the Dead Sea below the Mediterranean, and we still hope for the account of some careful observer, who may carry thither a good mountain barometer; in the mean time we look for the narrative of the Syrian travels of Dr. Robinson and the Rev. Eli Smith (who have already pointed out several mistakes in M. de Bertou's Memoir), which will lay before us the results of a journey made by keen observers and accomplished scholars.

In Asia Minor, that classic land of travellers, of which, from the earliest down to the most recent times, we have itineraries and routes without number, one might have thought there was little left to discover; but, far from this being the case, we find, from the journals of Messrs. Ainsworth, Rassam, and Russell, that, bordering on Europe, and within the reach even of our tourists, there are rich mines almost unknown; large cities whose names do not appear in our maps; forests abounding in timber, available for ship-building; and, in short, all the resources of a fertile and populous country.

A former account of these travellers conducted them from Constantinople, along the coast, by Erekli and Amaserah, to Chorúm and Angora. Having passed the winter at this latter city, they explored the mines of Ishik-Tagh to the N., lying about 4500 feet above the sea. They then travelled westwards to examine the Kurdish districts of Haïmaneh; thence, turning to the southward by a circuitous route, they travelled by Kizil-jah Kal'ah to the galena mines of Denek-Maden; then by Uch Ayák and Kír Shehr to Neu-Shehr, whence, taking a N.W. direction, they rounded the great salt lake of Tuz-Chuli, and traced its western outline. From Ak-Serai they travelled by Kaï-sariyah, Gurun, Derendah, and the little-known valley of the Tokmah Su to Malatiyah, whence, turning to the southward, they journeyed by the Nushan Pass through the Taurus to Sameísat and Bireh-jik on the Euphrates; thus completing a route of nearly 1000 miles, through a tract of country most imperfectly laid down on all existing maps. The unfortunate result of the battle of Nezib, at which they were present, and the disturbed state of the country, obliged them to return to Constantinople, where they arrived at the end of July.

Quitting this capital again on the 1st of November, Mr. Ainsworth and Mr. Rassam took the road by Iznik, Kutáyah, Koniya, and through Kulak Boghaz, a pass of the Taurus, to Aleppo; from this place they turned to the eastward, and, passing through Orfah, Mardin, and Nisibin, reached Mósul, on the Tigris, on the 31st of January of the present year. These, then, are the head-quarters of our Kurdistan expedition; and at the date of their last despatches, on the 12th of March, the travellers were only waiting for the melting of the snows to penetrate into the mountains of Kurdistan.

No great difficulty need be anticipated in this journey, since we know that Dr. Grant, of the American mission, has, during the last summer, effected the journey from Mósul, by Amadíyah and Julamerik, to Urumiyah, on the western borders of the lake of the same name.

The work of M. Texier on Asia Minor is in course of publication at Paris, and his map of Lysia has just reached us. We are anxiously looking for the detailed account of Mr. W. Hamilton's journey in 1837-8, which, to judge from the abstract communicated to our Journal, must be of great interest to the geographer. The survey of the western coast of Asia Minor is now nearly completed under Lieutenants Graves and Brock, who, having thus connected their own observations with those of Captain Beaufort in Karamania, will thence proceed to survey the numerous islands of the Archipelago.

In Armenia, Mr. Brant, British consul at Erz-Rúm, has communicated to the Society an account of the extensive journey which he

made in 1838 from that city, in a southerly direction, by Músh and Arghanah Máden, to Kharpút: returning along the valley of the Murad Chaï, or Eastern Euphrates, to Músh, he and his companions turned to the S.E., to Betlis and Tatvan, at the S.W. angle of the Lake of Van: continuing along its southern shores, by Vastan and Artemid, they reached the city of Van, and thence round the N.E. end of the lake to the foot of the Supan Dag. They were the first Europeans to ascend that mountain, which rises to the height of 4000 feet above the Lake of Van, or 9500 feet above the level of the sea: from this point the travellers turning to the N.E., passed by the sources of the Murad Chaï, to Bayazíd, at the S.W. foot of Mount Ararat, and thence by the pass of Keusseh Tagh to Erz-Rúm: thus completing a tour of about 900 miles through a country imperfectly known and very incorrectly laid down in our maps; many important towns, as Músh, Betlis, Palú, and Kharpút, &c., being placed from 12 to 20 miles in error in latitude.

Throughout this journey the astronomical positions of the principal places were determined, as well as their height, barometrically, above the sea: the line of route mapped by Mr. A. G. Glascott, R.N., shows, among other changes, that the Lake of Van must be extended nearly 30 miles to the N.E. of the place which it occupies at present upon our most accredited maps. This paper of Mr. Consul Brant is one of the most valuable, in respect to physical geography, which the Society has ever received.

M. Dubois de Montpereux of Neufchatel has published three volumes of his *Voyage autour du Caucase*, and several *Livraisons* of geological sections, which appear to be admirably got up.

Descending once more to the plains of Mesopotamia, I cannot deny myself the pleasure of awarding great praise to that enterprising officer Dr. Ross, of Baghdad, who has sent us a graphic account of his two journeys along the western banks of the Tigris to the ruins of Al Ha-hr, never visited before by any European. He encountered many hair-breadth escapes from the Arabs of the Desert, but finally succeeded in reaching these remarkable ruins, of which he has made a drawing: they are in very fair preservation, and occupy a space about 3 miles in circuit.

Dr. Ross has also made a difficult and rare journey from Mósul to the E.N.E., to the country of the Mír of Rawandúz, a track never before followed by any European, and an account of which he has kindly offered to communicate to the Society.

In the same plains of Mesopotamia, Mr. Forbes, a young medical officer of the Indian army, has explored the Sinjar mountains, a limestone-range, rising 1600 feet above the plains, given us a good account

of their inhabitants of the sect of Yezidis, and corrected the hydrography of this portion of the desert.

Lastly, we have to express our thanks to the President of the Board of Control for the communication of a beautiful map of the Tigris, by Lieut. Lynch, I. N., being a survey of that river from the ruins of Ctesiphon to the city of Mōsul—another of the excellent fruits of the well-known Euphrates expedition; and I am sure you will all join with me in hoping that the detailed account of this latter expedition, so full of geographical interest, will ere long be laid before the public.

AFRICA.—The unbroken mass of the continent of Africa, to which few rivers offer access, still opposes a great, but not, we trust, an insurmountable barrier to the progress of discovery; and, with the exception of an enterprising and successful journey to Ankóbar, the capital of Shoa, in the southern part of Abyssinia, even discovery, not to say geography, has advanced but little during the past year. The constant hostilities between the French and the Arabs on the northern shores have not been favourable to the progress of science.

In Egypt, Sir Gardner Wilkinson, already well known to you by his account of Thebes and his beautiful work on the manners and customs of the ancient Egyptians, has communicated to the Society a paper of much interest on the Nile and on the present and former levels of Egypt, from which it appears that the surface of the land has been raised by the deposits of the river 9 feet in 1700 years at Elephantina, at the first cataract; at Thebes about 7 feet; at Heliopolis about 5 feet 10 inches; and so on, gradually diminishing towards the sea, though in a greater decreasing ratio, owing to the wider extent of the delta. Sir G. Wilkinson also shows that the evil effects usually ascribed to the invasion of the sand have been greatly exaggerated; that the beneficial effects of the alluvial deposit far exceed the injury done by the sand, and that there is a greater proportion of land capable of cultivation now than at any previous period.

Mr. Ignaz Pallme, a Bohemian, has successfully penetrated to Kordofán, where he passed eleven months; and, in addition to the accounts of Rüppell and Holroyd, gives a curious description of the manners of the people and of the fertility of the country.

Between Kordofán and Dar-Fúr, he discovered the town of Kab Belúl, which has never before been mentioned by any European. This enterprising pioneer is, we believe, now at Cairo, ready and anxious to travel again and penetrate into Dar-Fúr, and explore the countries adjoining, if he can find any person to assist him with the small sum he requires. For a further account of M. Ignaz Pallme I may refer you to the

pages of the *Athenæum* ; and I gladly embrace the opportunity afforded me of bearing testimony to the value of the geographical information usually found in that periodical. We are indebted for a notice respecting this traveller to another well-known traveller, M. D'Abbadie, who is again on his journey to Abyssinia. While at Cairo he communicated to the Society an account of Mr. Linant's map of Egypt, on the scale of about 4 miles to an inch, which he states to be of much merit ; and, from the many years that Mr. Linant has passed in Egypt, and from his qualifications as a geographer, there is no doubt this will be a great addition to our present meagre knowledge of that country, and enable us to judge of the feasibility and comparatively trifling expense of a navigable canal from Suez to the Mediterranean.

Abyssinia has had the good fortune to have been subjected to the investigations of a zealous naturalist and excellent traveller ; and we have just received the 2nd Volume, with the map, of Dr. Rüppell's travels in that country, a work which, taken in connexion with his former journey to Kordofán, &c., places its author among the most distinguished travellers of the age. Dr. Rüppell spent much time in fitting himself to be a traveller, whereas the greater part of those who have the opportunity of exploring new countries are from previous education (or rather from the want of it) utterly unfitted to travel profitably : this is the secret of German travellers being so much superior to those of any other country in Europe.

From Mr. Russegger, who carried a good mountain barometer into Kordofán and to the mines at Fazoglo, we learn the elevations of numerous points above the sea, also the approximate positions of several places, put down apparently at hazard on our maps.

In the southern part of this country we have recently received the highly interesting account of the journey of two missionaries, Messrs. Isenberg and Krapff, who have penetrated from Zeilah, by way of Tajúrah, to Ankóbar, the capital of Shoa, where they have resided some months on very friendly terms with the King of Shoa. From their report we learn that this chief's influence is very widely spread, and he governs a rich and fertile country, is well disposed to trade and to assist in putting down the slave-trade, which is carried on to a great extent in Gurague and the adjoining districts, although the King of Shoa himself is not a dealer in slaves : much topographical information was also obtained, the situation of Tajúrah very materially altered, and the course of the Hawash carried much further N. From the very friendly disposition of the King of Shoa, his capital seems a desirable place to establish a resident, in order to procure information respecting the interior both to the S. and W. ; and I am happy to announce that Dr. Beke,

already known as the author of the “*Origines Biblicæ*,” &c., has offered his services to go to that spot in order to obtain the requisite information preparatory to crossing Africa in that parallel.

And this brings me to an expedition from which we cannot but hope the best results, and in which I feel confident every geographer must take the deepest interest: I need hardly say I allude to the expedition up the Quorra [Kawára], under three of our colleagues, Captains Trotter, Bird Allen, and William Allen, the last of whom is well known to you as having first laid down correctly the course of that river. It has been proposed by Mr. Fowell Buxton, and other benevolent individuals interested in promoting civilisation among the Africans—to which her Majesty’s government has liberally and promptly acceded—to send three steamers up the Quorra to the junction of the river Chadda, with a view to enter into treaties with the chiefs, &c. Once taught to cultivate the ground, and rendered sensible of the blessings of peaceful and industrious occupations, the Africans, it is hoped, will abandon the suicidal wars now incessantly waged, simply for supplying the foreign slave-trade, and, by their co-operation, enable us at length to effect the object which we have all so much at heart—the final and complete abolition of that dreadful traffic.

That this expedition will have a beneficial effect on the civilisation of Africa we cannot doubt; and if so, it will tend, indirectly as well as directly, to check that atrocious system which is the disgrace of humanity; and assuredly we may venture to hope for an ample harvest of great interest in the way of geographical discovery.

Preparatory to this expedition, Mr. M’Queen, already well known to you by his publications on Africa, has compiled a large map of North Africa from all available sources. This is now engraving under the superintendence of Mr. John Arrowsmith, and will shortly be published.

The work of M. Sabin Berthelot and Mr. Webb, on the Canary Isles, is still in course of publication at Paris: it furnishes an amusing exhibition of the very various forms which have been given to those islands by their numerous describers, and enters minutely into their botanical and geological productions.

Our corresponding member at Lisbon, M. de Macedo, has lately sent to us a notice on the Guanches of Teneriffe; a work which, though it may oppose the opinion of Dr. Prichard, evinces great reading and research connected with this interesting subject.

AMERICA.—Crossing the Atlantic to the New World, we come at once to the recent arctic discoveries, the account of which must be familiar to all my hearers. Nothing daunted by the dangers and difficulties experienced on a former voyage, those enterprising officers of the

Hudson Bay Company, Messrs. Dease and Simpson, again descended the Copper Mine River, and, pushing resolutely to the eastward, in spite of ice and gales of wind, succeeded in passing Cape Alexander of their former discoveries, and, sailing across a deep bay, reached a strait 3 miles wide, which led them out at its eastern end to the mouth of the Great Fish River explored by Captain Back in 1834; they then pushed on farther to the eastward, and reached their extreme point in $68^{\circ} 28' \text{ N.}, 93^{\circ} 7' \text{ W.}$, within 180 miles of the western entrance of the Fury and Hecla Strait, and this distance is now all that remains to complete the shores of the continent of America; and we had lately within this room the gratification of hearing Governor Pelly state that it was the intention of the Hudson's Bay Company to prosecute their efforts till they had brought this problem to a satisfactory solution. We have therefore good reason to hope that England will have the glory of completing the stupendous work begun by Columbus; and that the north-west passage, first attempted by Cabot, a merchant of Bristol, will, after a lapse of upwards of three centuries, by a company of English merchants be brought to a successful termination.

The survey of the river St. Lawrence has extended to Anticosti; and the party under Captain Bayfield, R.N., are now surveying the gulf of the same name along the coast of New Brunswick and Prince Edward Island. We learn, from the eighth report of Mr. Hassler to Congress, that the government survey of the coasts of the United States is slowly going forward, and that the shores of New Jersey and Long Island, as far as Rhode Island and the country adjacent, are surveyed and ready for drawing. We are indebted to Major Graham, U. S., for a chart, in 4 sheets on a large scale, of Cape Cod, in Massachusetts, by Lieutenant Wilkes, of the United States navy.

The reports of the geological surveys of the various states, as Maine, Virginia, Pennsylvania, &c., contain much information in physical geography; and I may particularly mention the report of the state of Michigan, as giving, in the clearest form I have yet seen, the length, breadth, area, depth, and height above the sea, of the lakes of North America, which together, it is stated, contain upwards of 14,000 cubic miles of water, a quantity which may be considered more than half the amount of fresh water on the face of the globe.

Farther west, Mr. Townsend carries us to the Rocky Mountains. Prince Maximilian von Wied's travels in that country are in course of publication at Coblenz, and I am happy to learn that Mr. Ackermann will shortly publish an English translation of them, with all the beautiful illustrations which are now lying before us. In the mean time, Mr. Catlin has brought to our doors a collection of graphic drawings of the race of red men now fast perishing away—a series of portraits of high

interest even under any circumstances, but doubly so to us in an ethnographical point of view.

The Historical Society of Ohio has taken up the subject of American antiquities, and one of its members, Mr. Delafield, has presented us with an inquiry into their origin, which contains much novel matter and various facts tending to prove that a civilised nation possessed North America before the discovery of Columbus. Mr. Delafield's work is illustrated by a map copied from one existing in the Museum at Mexico, and which, it is said, represents the progress of a nation which appears to have peopled America from the north-west.

The survey of the West Indies is going forward under Captain Barnet, R.N., who has recently completed the survey of the Sisal Bank and the N.W. portion of the coast of Yucatan : his vessels are employed alternately, according to the seasons, among the islands or along the coast of Mexico and Guatemala. The want of a tolerable map of Mexico has lately been brought to the notice of the Society by Major Charters, R.A., who has also furnished us with an account of his routes from Zacatecas by Bolaños to Tepic, and again from Saucedo to Catorce, in which the physical geography of that elevated table-land is well described. Major Charters has also commenced a map of Mexico on a large scale, and invites the contributions of all travellers to enable us to make some attempt at a respectable delineation of that country.

Some points on the west coast of Mexico, as well as of Guatemala and of California, have been recently determined by the nautical survey of that coast now carrying on under Captain Belcher and Lieut. Kellett, R.N. These officers have also, we believe, visited the lakes of Leon and Nicaragua, and some of the islands in the Pacific. From the good supply of instruments and the known accuracy of the observers, there is little doubt but that the *Sulphur* and the *Lark* will bring home a valuable supply of fixed points upon the western coast, of which at present there is a great dearth.

We have recently had the pleasure of hearing Mr. Isidor Löwenstern's account of his journey across Mexico from Vera Cruz, by Tepic, to Mazatlan on the Pacific : he subsequently ascended Mowna Roa, in the Sandwich Islands, and visited the Celebes ; and I have much gratification in announcing to you that Mr. Löwenstern will shortly return to Central America, intending to examine the magnificent ruins of Palenque, to explore the province of Chiapa, to visit the Lake Peten, and probably the peninsula of Yucatan. He is at present engaged in procuring the best instruments and in qualifying himself by previous study for the journey he is about to undertake ; a journey which cannot fail to be of high interest, as there is hardly any part of the continent of

America with which we are so little acquainted. I am sure, gentlemen, you will heartily join with me in wishing health and success to this enterprising traveller.

Passing on to South America, we come at once to the country which Mr. Schomburgk by his recent explorations has made quite his own. I need not say that I allude to Guayana, a full account of which, in noticing the award of the Patron's Medal for 1839, I have already had the gratification of laying before you. Since the publication of Captain FitzRoy and Mr. Darwin's narrative of the voyages of the *Beagle*, and the admirable map of South America by Mr. John Arrowsmith, little has been added to our knowledge of that country, except Mr. French's account of the province of La Rioja and Captain Gosselman's journey from Cordova to Mendoza.

We have received from our corresponding member Don Pedro Angelis, at Buenos Ayres, the 6th vol. of his collection of documents on the provinces of the Rio de la Plata, which brings to a close (for the present only we hope) this excellent and laborious work. This volume, in addition to the memoirs by Malaspina, Viedma, and Azara, mentioned in a former annual address, contains Sourryère de Souillac's description of a new line of communication between Buenos Ayres and Chile; the pilot Villarino's diary of a voyage in 1781 from the Rio Negro to the Colorado; and also his examination of the Rio Negro in 1782, an abstract of which was communicated to our Journal by Sir Woodbine Parish in 1836.

M. D'Orbigny's great work on the natural history of the republic of La Plata and the Banda Oriental is still in course of publication at Paris; and we anxiously look for the narrative of Mr. Pentland's travels in Bolivia, which, to judge from the brief account he gave us last year within these walls, must be of great interest to all lovers of geography.

AUSTRALIA.—The progress of discovery and the march of colonization may be said to go hand in hand in the great island of Australia.

Scarcely have we received intelligence of the existence of a river flowing about 100 miles from the S.W., and falling into the sea at Shoal Bay, in 29° 30' S., when we hear that its rich alluvial banks have already become the station of numerous colonists.

At Port Phillip the town of Melbourne increases rapidly; and a chain of posts is established between that place and Sydney, a direct distance of about 400 miles, and the road considered so secure that it has already been travelled by a lady.

At Adelaide, on the eastern side of St. Vincent's Gulf, a city is rapidly rising, where a few years ago all was solitude: the track from

Sydney to this capital has become almost a beaten road for enterprising drovers with their flocks of thousands of sheep. Another town has been founded at Port Lincoln ; and Mr. Eyre, already well known as a traveller, has just completed a journey from this port to the N.W., in order to examine Streaky and Fowler Bays, where it was thought probable an outlet of a river might be found, instead of which, however, Mr. Eyre states that the little water he met with in crossing the Port Lincoln peninsula all drained to the north. The Society is indebted to Colonel Gawler and to the South Australian Commissioners for a map showing all these routes, and for a vocabulary of the native language spoken in Adelaide district, drawn up by Mr. Williams. Governor Gawler adds, in his last letter, that so strong is the spirit of discovery that there are three gentlemen, zealous and well qualified, ready to start across the whole breadth of the island to Port Essington, if only provided with the requisite funds.

In Western Australia we have the track of Captain Grey, who, nothing daunted by the fatigues and privations he underwent on the N.W. coast, again set out in February, 1839, on an exploratory journey to Shark's Bay : while here his boats were wrecked in a gale of wind, and he and his party were compelled to make their way overland to Perth, a direct distance of 350 miles, through a country utterly unknown, during which they suffered extremely from hunger ; and I lament to add that Mr. Frederick C. Smith, a young man of much promise, succumbed under the great fatigue to which his youthful frame was exposed.

Captain Grey reports very favourably of portions of land in this district. No hostility was encountered on the part of the natives ; and he has by his inquiries established the important fact, that the same language is understood through a distance of upwards of 600 miles on this coast, a fact opposed to all the hitherto received accounts. Within these few days we have received from him a vocabulary of the language spoken in Western Australia, which this zealous officer appears to have studied with great diligence.

On the north coast the establishment of a settlement named Victoria, which stands on an eminence on the western side of the deep inlet of Port Essington, affords every prospect of being followed by beneficial results. A friendly intercourse has already been set on foot with the Bughis, the trepang fishers, as well as with the natives of the country and, from its favourable position with respect to the Asiatic archipelago, there is reason to believe this place may become of much commercial importance.

The nautical survey of the coast of Australia during the past year under Captain Wickham has been chiefly confined to the dangerous but

much-frequented channels named Bass and Torres Straits ; but while these sheets are passing through the press we learn that he has recently discovered, and explored for a distance of 100 miles, two rivers which fall into the sea at the south-eastern angle of Cambridge Gulf, on the north coast.

In the mean time Captain Owen Stanley, in the *Britomart*, has visited Timor and Timor Laut, the Tenimber, the Kí, and Árru Islands, celebrated for the birds of paradise, and has correctly laid down many positions in this hitherto almost unknown archipelago ; and Mr. Windsor Earl has given us much insight into the manners and customs of a harmless and well-disposed race of men, both from his own recent personal observations and by his translation of Kolff's voyage to the Moluccas.

The last voyage by our countrymen in these seas which I have to mention to you is too characteristic of the spirit that animates our yacht sailors not to command your attention for a few minutes. I need hardly say that I allude to Mr. James Brooke, who, in his yacht the *Royalist*, a schooner of 150 tons, fitted out and furnished with costly instruments, entirely at his own expense, has sailed to explore the Asiatic archipelago. Touching at Rio de Janeiro, the Cape of Good Hope, and Singapor, Mr. Brooke sailed for Borneo, and commenced a survey of the north-western coast, which he has carried on for 60 miles : he has also ascended the river Samarahn, never before mentioned, for a distance of 100 miles ; held communication with the Dayaks, the natives of this country ; and made a large collection in natural history. This enterprising sailor is still prosecuting his researches in Borneo, and will, we believe, before his return home, visit both Manilla and the Celebes.

New Zealand has recently excited much public attention ; and since the energetic measures that have been set on foot to colonise that country there is little doubt that the progress of discovery will be rapid : the last accounts from the colonists describe them as having settled at Port Nicholson, a fine harbour at the southern extremity of the northern island ; a plan of which, made by Mr. Chaffers, R.N., is just published by Mr. Wyld, and has been presented to the Society by the New Zealand Association.

On the Polynesian islands, M. Domeni de Rienzi has offered to our library his work, entitled "*Oceanie*;" and Mr. F. D. Bennett has just given us in detail the results of a whaling voyage round the globe, in which are recorded the observations of an indefatigable and accomplished naturalist. The Society was already indebted to Mr. Bennett for an abstract of this voyage, published in its Journal for 1837.

Time would fail me were I to attempt to describe either of the great foreign voyages of circumnavigation now in progress, both from France

and the United States of America: suffice it to say that the expedition under Commander Wilkes had, at the date of the last accounts, reached Sydney, in Australia, and that of M. Dumont D'Urville had arrived at Van Diemen's Land; and by a letter recently received from Sir John Franklin we learn that Captain D'Urville had on the 1st January sailed to the southward in hopes of discovering the position of the south magnetic pole.

But I cannot conclude this brief account of the progress of discovery without directing your attention to the Antarctic Ocean. Discovery there during the past year has been far from barren in its results. We are again indebted to that spirited merchant Mr. Enderby, and some of his brother merchants, for an expedition sent out in 1838, under the command of Mr. John Balleny, which made the discovery of a group of islands in $66^{\circ} 44'$ S. lat., and sailed through 80° of long. (within the parallel of 60°), which had not hitherto been passed over by any navigator; but this, we trust, is only the forerunner of the expedition under Captain James Ross, R.N., which has recently left our shores; and, although this latter expedition is mainly fitted out with the object of deciding the great problem of terrestrial magnetism in the southern hemisphere, and its attention will be chiefly directed to this branch of physical geography, we cannot but hope it may also do much in the cause of antarctic discovery, and conclude with the earnest wish that the well-known zeal and ability of the gallant commander may be crowned with success, and that he may safely return to his country and his friends, to receive the well-merited reward of his toils in the applause and esteem of all civilised nations.

In stating to you the progress of Geography during the past year, I have thought it necessary to defer the consideration of a question which must now be brought distinctly before you—the *previous question*, “What sense does this Society affix to the word Geography?” The question is not new to you: I am aware that it has been treated before, and with great ability; still there are in society different opinions afloat, and if we are to act in concert it is necessary that the subject should be brought again and again under your consideration until those opinions coalesce. I shall therefore, with great deference, submit to you the sense I attach to that term, which is the bond of our union, and the interpretation of which determines the nature of those obligations which, as members of this Society, we are bound to perform.

Geography is either simple or compound: simple geography, in the sense which I wish to affix to that term, is a science; a science, the

object, the sole object, of which is to investigate the origin, substance, form, dimensions, properties, capabilities of the earth in gross and in detail—its actual condition, its past history, its future prospects.

The several members of the solar system—caloric, light, the galvanic, magnetic, electrical fluids, the various gases, the winds, the tides ; all these either enter into the composition of the earth or sensibly and continually act upon it. All these then belong to simple geography.

Plants and animals in their fossil state constitute no inconsiderable portion at least of the crust of the globe. Coral islands are actually forming—the surface of the land undergoes, day by day, various modifications produced by the agency of man : lakes are drained, hills lowered, valleys filled up, rivers deepened, bays produced by human industry and contrivance—the earth is quarried for the supply of our dwellings and the construction of our roads—the adventurous miner plunges deep below the surface in search of coal and the metallic ores. We contend with the earth during our entire lives, and amalgamate with it afterwards. Simple geography is not limited then to the contemplation of inorganic matter. Life, both animal and vegetable, necessarily belongs to it. In respect to simple geography, the common centre to which all our observations and reasonings should tend is the earth—the terraqueous globe. All physical objects whatever are included within the circumference of the circle which I have ventured to describe—but physical objects only. Moral considerations are without it : the animal part of man belongs to simple geography—not so the intellectual. With man, in his social, civil, political character, simple geography has no concern.

Gentlemen, in claiming for Geography everything which belongs to the earth, I have brought within its circle much that is usually comprehended within that of astronomy, natural philosophy, and geology. My justification must be, that every part of Nature is in close connexion with every other part ; and that the several sciences, notwithstanding all our attempts to separate them, will often intersect.

Having assumed the title of the Geographical Society, I cannot but put in our claim to investigate every subject which is connected directly or indirectly with the earth ; at the same time I feel it due to those Societies which without assuming that title have successfully applied themselves to the prosecution of a part of those duties which we, in assuming it, have engaged to perform, that we should appear before them in the light, not of rivals, but of allies, and rather urge them to persevere in the same course, by allowing our claim to be in abeyance, than throw any obstacle in their way : those parts of Geography which are cultivated we may still leave in the hands of those

who first brought them into cultivation ; our utmost exertions, be assured, will not be more than sufficient to fertilise the fallows.

It is to be regretted that in common parlance the world and the earth should be considered synonymous ; for the want of precision in language tends always to produce a confusion of ideas.*

In contradistinction to simple Geography, I use the term compound Geography to express those various combinations of a study of the earth which are designated by the denomination of—political, civil, statistical, ethnographical, philosophical, chronological, classical, scripture geography, &c.

The leading distinction between simple and compound Geography is this, that the one is a branch of physical science only—the other, a mixture of sciences.

With a view to the successful cultivation of simple Geography, I consider essential—1. A systematic classification of all the objects which belong to it. 2. A precise and fixed terminology. 3. A good nomenclature.

By these three contrivances Linnæus, Jussieu, Lavoisier, Cuvier, Lamarck, Werner, Haüy, &c., have given to the sciences which they respectively cultivated, or almost created, an impetus which they can never lose till they arrive at perfection itself;—let us apply the same treatment to Geography.

CLASSIFICATION.—Numerous attempts were made in the very infancy of geography to combine mountains into chains, ridges, groups ; and these attempts have been renewed by each succeeding generation up to the present time : being premature, it is not surprising that they should have proved abortive. Many of these combinations, in default of the requisite knowledge, have been purely conjectural ; all have been derived from insufficient data. The *mountain-chains* of Buache traverse without let or hindrance both land and sea ; and of those which rise above the surface of the waters, we know not what amount of rise is required in other systems in order to entitle them to the same appellation : nowhere do we find laid down any fixed principle to mark the bond of connexion between the several parts of these chains, or to determine how the supposed connexion begins or ceases. In the orographic map of Soriot de l'Hoste (a map of no ordinary pretensions), mountain-

* The habitable world I consider to be an incorrect expression : when we speak of a map of the world, as known to the ancients, we refer, I imagine, not so much to the earth as to the people who inhabit it. In this sense we speak of—the political world, the intellectual world, the moral world, the fashionable world. The Greek word *γῆ* means sometimes land ; as employed by us, it means the terraqueous globe, but not the world.

ridges and watersheds are supposed to coalesce, whence it follows that the surface of Russia exhibits as many furrows as that of Switzerland. The ablest system of orography (that for which a medal was justly awarded to M. Bruguère by the Geographical Society of France), with all its merits, is open to many and grave objections. Need I observe that the classification of seas, rivers, lakes, bays, promontories, plains, valleys, and every other description of objects in physical geography where classification exists, stands equally in need of reform?

TERMINOLOGY.—The terminology of Geography is in most languages redundant rather than defective; the terms are very numerous and generally very good; all they want is precision. In countries like England, where no provision is made for maintaining the purity of language by Government or by any philosophical establishment, there is a strong tendency in words to fall off from their original meaning, and to become indefinite. In the Celtic languages the words *ben*, *pen*, *croheh*, *carn*, *carreg*, *bron*, *drum*, *mynydd*, *slieve*, *moel*, each expressed not merely an eminence, but an eminence of a specific form, or having a peculiar character. In modern English the words *hill* and *mountain* are used almost as synonymous, and to express the specific characters we are obliged to resort to phrases. In like manner we have lost in English all power of designating, by a single short word, all those various modifications of valleys which were conveyed by the words *den*, *glen*, *dingle*, *strath*, *comb*; it is highly desirable that we should endeavour, if possible, to recover some of these lost forms of expression. The subject of terminology has already been brought under the notice of the Society, by Colonel Jackson, in a paper which will be found in the IVth Volume of the “*Geographical Journal*,” and will, I hope, during the ensuing year, engage the deliberate attention of the Council. The old Celtic terminology, being composed almost entirely of monosyllables, is singularly applicable to the construction of an expressive and appropriate nomenclature.

NOMENCLATURE.—Gentlemen,—In an address of your Secretary, in Vol. VIII. p. 260, of your Journal, he notices a paper by Captain Vetch, on Australia, as well worthy of serious consideration, and expresses a hope that geographers at least will exert their influence in rescuing that country from the barbarous nomenclature that is daily gaining ground, and which, if not checked at once, will become so firmly established that it will be nearly impossible to eradicate it.

I am sorry to observe that this barbarous nomenclature still rages uncontrolled; it is an evil which has increased, is increasing, and ought to be diminished.

The first great evil which I shall point out to you as connected with this subject is the appropriation of the same name to objects of the same kind, but situated in different, sometimes in very distant, parts of the globe. The county of Cumberland, for instance, is situated not only in the North of England, but also in Australia, in the State of Maine, of North Carolina, and of Kentucky; so the county of Northumberland will be found in Australia, Virginia, and New Brunswick; there are very few of the English counties which are not in the same predicament. Washington is the name of a province in the States of Maine and Rhode Island. In New York, Pennsylvania, Maryland, Columbia, Virginia, Georgia, Ohio, Kentucky, Illinois, Missouri, we find this same name applied to a town; and from Mitchell's map we learn that this name is applied to no less than *one hundred* places in the Union.

In the United States of America there are five provinces of the name of Jefferson and Maddison, ten of the name of Franklin; Montgomeryshire is to be found in Pennsylvania, Maryland, Virginia, Alabama, Tennessee, and North Carolina; nine towns are distinguished, or confounded, by the name of Athens, ten of Alexandria, thirteen of Manchester and Newmarket. The name of Melville has been echoed from cape to cape, from bay to bay, from island to island, till it has attracted the ridicule of every geographer.

The next source of confusion which I shall point out, with a view to its discouragement, is the right which geographers assume to translate or not to translate those names of places or objects in other countries which happen to have a determinate signification:—*Bipont*, *Deux-ponts*, *Zwei-brucken*—the *Black Forest*, le *Forêt Noir*, *Schwarz-wald*—*Ile-de-Pâques*, *Easter Island*—*Anguilla*, *Snake Island*.

The third abuse of geographical language which deserves to be watched is the practice of giving to objects different names from those which are given to them by the inhabitants themselves, as England, Angleterre, Inghilterra; Deutschland, Germany, Allemagne; München, Munich, Monaco.

The aboriginal names of any language are for the most part expressive, being compounded of syllables the sense of which conveys to the mind of those conversant with the language the peculiar character or distinctive quality of the place or object so designated. This good old practice cannot be too strongly recommended to those who have to invent and affix names to newly-discovered objects in the present day. I would further recommend, where practicable, that the syllables selected to compose the name should be taken from the language of the country. This would not only give to the vocabulary of geography a much greater variety and copiousness than can be obtained from resorting always

to the same language, but assist the memory ; since the sound or sight of the name would suggest the locality of the place. No one on hearing the name pronounced for the first time would doubt that Whang-ho, Wo-chou, Quang-han were in China ; but it does not occur as readily to the mind that Theopolis or Philipolis is to be found at the Cape of Good Hope, Jericho in Van Diemen's Land, Athens in Alabama, or Sparta in Connecticut.

Durability is a quality extremely desirable ; and, although it is mere pedantry to change even absurd names when they have once been generally received, yet in devising new names it is advisable not to hold out any temptation to change : this applies more especially to political and national names, which, however grateful to the parties by whom they are given, are apt to excite national jealousy in foreigners, or give rise to party feelings in individuals. The name of New Holland, for instance, is no longer used at our government offices ; foreign astronomers rejected with indignation the name of *Georgium Sidus* ; nor have the French thought proper to adopt the name of the English Channel. So jealous are botanists of transferring to plants the names of any persons but botanists, that they have refused to admit among the genera in their system the honoured names of *Bonorota*, *Chaptalia*, *Hippocratia*, *Cartesia*, and *Blumenbachia*.

It has been long a practice throughout civilised Europe to transfer to persons the names of their real or supposed estates or homes, and it is not to be wondered at that by a counter-process places in newly-discovered countries should receive names or titles from persons. This practice is now too universally established to be checked, if it were desirable to check it ; but it seems not impossible to regulate its application in some degree (if it should be thought to require regulation), since names given by individuals cannot be introduced into maps without the consent of geographers. But by far the greater number are not given by individuals, but by some department of government, or persons acting under such department. I would beg leave to suggest, in reference to this practice, the following brief observations :—

1. That the value of complimentary names varies inversely to their frequency.

2. That these names can confer no honour on any party if they emanate from favour, flattery, or caprice.

3. That it would be desirable that some proportion should be observed between the dignity of the person and the dignity of the namesake : the name *ADELAIDE* should not be given to a shoal, nor that of *VICTORIA* to a marsh.

4. Where names are selected which have no natural or obvious con-

nexion with the spots to which such names are annexed, it would seem desirable that the names of the same district should observe a certain harmony and congruity one with another. A group of Scotch names would be more appropriate to New Caledonia or Nova Scotia than to New South Wales, whether situated on the eastern coast of Australia or on the south of Hudson's Bay. In the state of Massachusetts we find Ashburnham, Dudley, Lancaster, Leominster, Oakham, Oxford, Petersham, and Uxbridge, all in Worcestershire. So we find Abingdon, Duxbury, Halifax, Kingston, Plympton, Rochester, Pembroke, all in the province of Plymouth; Andover, Beverley, Gloucester, Haverill, Ipswich, Lynn, Middleton, and Salisbury, all in the province of Essex. In Van Diemen's Land the hills have been given to Hampshire and Surrey, the plains to Middlesex and Norfolk. The province of Ohio is not in the state of Ohio, but of Kentucky. Indiana, a province of Pennsylvania, is one of the states of the Union. In Alabama, Washington is the name of a province as well as a town, but the town is in the province of Asturga; the Kentucky Washington, again, is not in the province of that name, but in the province of Mason. A momentary glance at a map of the United States of America will afford many amusing examples of geographical inconsistency.

5. Where the names of professional persons are adopted, it would appear more natural if some relation were observed between the nature of the profession and of the object named. The name of a distinguished general would be better applied to a fortress than to a lake; the name of a judge to a province than to a river.

6. There is one principle which should never be lost sight of in nomenclature—the value of conciseness. Without attention to this circumstance a name may be given to a village which, on a map constructed on a small scale, would extend over a whole country. All writing in maps is an evil, though a necessary evil; and it is desirable to confine the quantity of it within the narrowest practicable limits. Though we ought not to change lightly native names, yet it can hardly be desirable that in the names of the provinces of Sumatra we should long continue to find “Sapulobuah-Bandah; Pasummaho-Cumaña.”

7. In adapting the names of persons to places it is further desirable to bear in mind the meaning of the final syllable. The term *Mel-ville*, for example, would be applied more naturally to a town than (as it has been applied in Australia) to a mountain. *Master-ton* might just as well have been given to the capital of a settlement as to a range of mountains. Where the terminating syllable of a proper name expresses a physical object, it would be a praiseworthy economy to confine its use to that object, applying the other syllables, with other ter-

minations, to the district at large. In this manner the position of the different objects would be guides to one another: thus we might have *Welling-ton*, *Welling-vale*, *Welling-river*, *Welling-ford*, *Welling-burn*, *Welling-hurst*, &c. &c.

When simple Geography, or the study of the earth, itself enters into combination with the study of any other subject, there results a new science. What I have called *compound geography* is a cluster of such sciences, every one of which requires a separate classification, terminology, and vocabulary; all these vocabularies entering into what I have called geographical nomenclature.

Words following words in long succession, however ably selected those words may be, can never convey so distinct an idea of the visible forms of the earth as the first glance of a good Map. Of all contrivances hitherto devised for the benefit of geography, this is the most effective. In the extent and variety of its resources, in rapidity of utterance, in the copiousness and completeness of the information it communicates, in precision, conciseness, perspicuity, in the hold it has upon the memory, in vividness of imagery and power of expression, in convenience of reference, in portability, in the happy combination of so many and such useful qualities, a Map has no rival. Everything we say or do or think has reference to place; and wherever place is concerned a map deserves welcome: there is scarcely one department of knowledge, physical or moral, beyond the sphere of its usefulness; to geography it is indispensable.

To increase the number and improve the quality of Maps is, I conceive, among our first duties, and, I hope, among our most earnest desires. When I speak of increasing the number of maps, I speak not of individuals but of species; what I would wish to remedy is not so much their paucity as their sameness. How few, how exceeding imperfect are the maps hitherto constructed in illustration of simple geography! Where shall we find engraved a complete series of the several mountains which stretch over, I will not say continents, but individual kingdoms? Of maps professedly orological, where are the heights shown in their true form and just proportions? Where is to be found any approximation to a complete entry even of their names? And yet without many such maps, and upon a large scale too, and unencumbered with other objects to distract attention, it seems impracticable to acquire an adequate idea of the physical forms of the surface. So, too, in respect to valleys. How rare have been the attempts to express by mapping the different features which these exhibit in different parts of their

course; the flatness or inclination of their bottom; the gradual slope or sudden steepness of their banks; the depth of their cuttings; their expansions and contractions; their concavities and convexities; their salient and re-entering angles! These are subjects of high interest to the geographer, but hitherto almost wholly disregarded by the map-maker.

An ample series of Maps upon a sufficient scale, designed exclusively for the service of simple geography, deserves to be placed in the foremost rank of our desiderata.

The mode in which the physical constitution of Wales has been treated in a map which I had lately the honour to present to the Society will explain to you, imperfectly indeed, yet more readily than description, the views I entertain as to the mode in which such a *series* ought to be conducted. Among the peculiarities of that document I may mention that the mountains have been all carefully shaded to scale; that the engraving of a single name was not begun till that of the whole landscape was completed; that in making subsequent insertions the integrity of the landscape was jealously guarded; that every name, before it was admitted, underwent examination with reference to the purpose which it had to serve; that no river or mountain, of which a name could be discovered, has been permitted to go unnamed upon the map; that the names of rivers are inserted, not only at their mouths but at their bifurcations, unless when special reasons justified or required their omission; and that the names of the mountains have, by virtue of a short reference, been all transferred from the body of the map, where they would damage the plan-work, to the margin, where they are perfectly accessible, and at the same time perfectly harmless.

Simplicity is essential to excellence, whether in science or in art: every map should have a determinate object, and be to the geographer what a diagram is to the mathematician—it should contain just as many names, lines, and signs as are necessary, and not one more. Suppose the diagrams in Euclid were not separate, but heaped one upon another, so that the same figure would apply to every proposition;—would not the student find this an intolerable grievance? Amid so many tangles, how could we obtain the proper clue? Mystification must be the result.

When we consider the genius required to invent and compose a map varying in principle as well as in detail from its predecessors, and constructed solely for the illustration of one particular branch of geography—when we consider the industry with which the materials are to be collected, the judgment with which they are to be sifted, the discrimination with which they are to be classed, the skill with which they are to be combined, the taste with which they are to be expressed,

the accuracy which is to be exemplified in the plan-work, the experience wanted in the engraving, the number of unsuccessful experiments which must be made before any one is successful, the weariness of correction,—it is little to be wondered at that few maps of this description ever come into existence. Governments do not undertake them, nor scientific societies, nor joint-stock companies; all is left to individual exertion. And what encouragement have individuals to embark in such undertakings but the pure love of science for its own sake? Maps of this description cannot be brought to day without an outlay of capital such as few philosophers can command. Two or three of them would furnish occupation for many years; and, when at length they are completed, in what way are they to be circulated? The publishers of maps (few in number, and almost all Londoners) have no extensive connexions as booksellers have. They are, besides, almost all authors as well as publishers of maps, whose interest it is to keep out of the market any articles that threaten to interfere with the sale of their own. It is well known that the Ordnance Map of England, notwithstanding its acknowledged excellence, could never overcome the passive resistance opposed to it by the trade till a shop was opened for the sole purpose of bringing it into notice. Even with this advantage its sale has been extremely limited. Maps generally excite so little interest in the lovers of every other description of literature, that they are seldom or never chosen as subjects of criticism in *Magazines* or *Reviews*. Noblemen and gentlemen, whose libraries are regularly supplied with every book, even of moderate excellence, almost immediately after it has quitted the press, take little heed of maps, any one of which contains, for the most part, more abundant and more accurate information than a long range of quartos can supply. Book societies are equally ill provided with them. The several offices of government, in which one would suppose a ready access to geographical information would be daily if not hourly wanted, are so little self-indulgent in this respect, that you rarely find there even a valuable map of the country or countries which fall more immediately under their care or guidance. The collections of foreign maps at the Foreign, or colonial maps at the Colonial Office are meagre in the extreme. It happens in regard to this as to every other commodity, that the want of demand and want of supply act upon each other reciprocally as cause and effect. The lack of sale of the Ordnance Maps is the more remarkable because these maps are not addressed to students of a particular class, but designed to satisfy all tastes; nor is it less remarkable that the very sensible reduction of their price which was resolved upon some time since, with a view to extend the sale, has, I believe, not had that effect; the sale having actually fallen

off since that reduction. The Society for the Diffusion of Useful Knowledge, acting upon the same principle, have succeeded so far as to obtain for the maps published under their direction a very extensive circulation ; but, as far as I am able to learn, they have by no means spread a taste for maps among the people at large, but only introduced among those who before had that taste a desire to save their money, by disregarding excellence when placed in opposition to cheapness. The bait thrown out to frugality, in this case, has no doubt in some degree been beneficial, by putting better maps into hands that would otherwise have been content with worse or none at all ; but it has also acted inversely, and rendered many persons content with worse maps who would otherwise have been willing purchasers of better. The double competition now established by two bodies so effective as the Ordnance Office and the Society above named increases the risk, or rather the certainty, of failure to which adventurers are exposed, who, for no other object than the improvement of geography in general, or its adaptation to specific purposes, aspire to introduce into maps sounder principles of construction, and bestow upon them greater powers of expression.

The improvements which take place continually in the mechanical arts would, under more favourable circumstances, be applied to the use of the map-maker much more promptly and extensively than they are at present.

Many processes which are at present confined to the engraving of landscape and figures, such as mezzotinto and aquatinta, might, on different occasions, be usefully resorted to for the representation of ground. zincography, lithography, wood-engraving, and printing with moveable types, might be rendered more efficient auxiliaries to us than they are at present. The transfer of engraving from paper to stone, and from copper to steel, might be employed advantageously in some cases ; stenciling and colouring by blocks, in others ; shadows produced by dots or lines of various patterns, and of different intensities, would greatly heighten the expression of maps, and they might be used to convey an endless variety of ideas. Much might also be effected by the employment of paper wholly or partially transparent. These and other processes would be already in general use but from the unfortunate indifference with which maps are regarded.

The last obstacle to the improvement of mapping consists in the insecurity which attaches itself to that description of property. The law, as it at present stands, gives to copyright no more than a delusive show of protection ; the temptation to piracy varies directly as the merit of the original, and a lithographic press will produce in a few hours, and

for a few shillings, the counterpart of that which has been the slow and expensive acquisition of years.

How far it is in the power of this Society to suggest or apply a remedy to the various evils which I have now, perhaps somewhat tediously, specified, I do not know. I have myself none to propose; but, believing that the map is, of all the instruments in our possession, by far the most valuable and effective, it seemed to me desirable that I should call your attention distinctly to the subject; and I cannot but hope that, the reality and extent of the mischief being once laid before you, the antidote is not far distant.

We have now (thanks to the liberality of the Trustees) a complete catalogue of the MS. maps, charts, plans, and views contained in the British Museum, including those in the library of George III., drawn up by Mr. Holmes, of the MS. department of that establishment. This gentleman is also engaged in preparing a bibliographical notice of all ancient maps of which notices are dispersed through the various geographical works, which will be of great service to the lover of cartography. At St. Petersburg also has been just published a catalogue by Adelung of all the old foreign maps in which Russia is represented, from the year 1306 to the close of the seventeenth century.

M. Jomard, Conservateur of the Bibliothèque du Roi at Paris, is also engaged on a catalogue of the MS. maps in that rich establishment, which contains, among other precious geographical monuments, the celebrated *Cartes Catalanes*.

As connected with this subject, I cannot omit to mention a letter recently read before this Society, in which Mr. Holmes gives his reason for questioning the accuracy of the date usually assigned to these maps, namely 1346. This letter has been courteously replied to by the well-known eminent geographer, M. d'Avezac, who, admitting the force of many of Mr. Holmes's objections, asserts that the said map must have been of the date of 1375, as it formed part of the library of Charles V. of France: to which Mr. Holmes naturally replies, "Where is the evidence that this map is the same?" The presumption is that it cannot be the same map, as it is well known, and stated by all French authorities, that that library was either sent to England or dispersed. The question of their date therefore still remains undecided.

The only other remark which I shall offer on the subject of maps is, that the good fellowship which happily subsists between this Society and similar establishments in other parts of the world affords increased facilities for the substitution of general rules for national peculiarities. The geographical mile ought to be the only one recognised by geographers.

The scale of every map should be expressed after the same fashion whether we chose to adopt the mile just mentioned, or, as it is termed, the natural scale. In like manner, all longitude should be reckoned from a common meridian.

In last year's address Mr. Hamilton alluded to a revision of the principal maritime positions, or an attempt to combine, as far as possible, the existing evidence into a connected system, by Lieutenant Raper, R.N., for the purpose of constructing a table for his work on navigation. Several papers have appeared in the *Nautical Magazine* for 1839, in which the author has carried his work through Europe, the Atlantic, West Indies, and South America; and the completion of the series is, we understand, shortly to be expected.

Those who have perused any of these papers cannot fail to be aware that the great obstacle to producing that systematic connexion among the several places which is a point of paramount importance to the interests of navigation arises from the want of noting distinctly the actual results of observations and differences of longitude. The usual custom of giving merely the gross results deprives the compiler of all means of proceeding analytically by comparing the relative value of different determinations, and leaves him no alternative but to involve each succeeding determination in a mean with all the preceding, by which the whole is kept perpetually in a floating state. I therefore earnestly recommend all navigators to abstain from this vicious system, and entreat them to give their meridian distances honestly to the world, without mixing them up with the labours of their predecessors, if they would not see hydrography retrograde, and our tables of position fall into inextricable confusion.

To obviate the inconvenience arising from the various measures of height adopted in different countries, M. de Candolle has suggested the use of a centigrade scale which would be applicable to all: the highest known mountain of the globe being represented by 100° , and all others by some fractional part of this number.

I cannot conclude this address without alluding somewhat more distinctly than I have hitherto done to the labours of the Society, the use we make of our acquisitions, and the result of the ten years' experience which we now possess of its working and organization.

Some of our members have from time to time expressed an opinion that we ought already to have raised Geography to the rank which she is entitled to occupy—that of a real Science; that the data we have collected should ere now have been compressed into a tabular and sys-

tematic mould, so as to be available at a moment's notice to any one who might wish to consult them; and further, that it was our duty to confine ourselves to details strictly geographical, without any admixture of historical research, any ethical or political interpolations.

Gentlemen,—In the observations which I have this evening had the honour to address to you I have given, I trust, a sufficient pledge of my attachment to system. Gladly shall I hail the dawn of that day when, not content with devouring information, our main object shall be to digest it; when our harvest shall not only be well housed, but well winnowed, and the good corn effectually separated from the tares, the straw, and the chaff.

No one is more sensible than myself of the delight, not to say the glory, of being able to trace effects to their causes, and, by long meditating upon well-ascertained facts, to establish at last general conclusions. Thankfully will I accept, and fervently do I desire, the co-operation of every geographer who is willing to direct his services to the attainment of that desirable end. This, I have no hesitation in admitting, constitutes the noblest part of our duty; but still only a part, and not that perhaps which most clearly proves our usefulness, or most effectually guarantees our success. Societies, like individuals, entertain different feelings, opinions, and desires, at different periods of their existence. Geographical science, as it becomes more generally known, will be more generally and deeply respected; but it is not known sufficiently at present to render it prudent to make it the sole object of pursuit. The desire of novelty, the ambition of discovery in general, without reference to the specific kind of discovery, has hitherto formed so marked a feature in our character, and contributed so largely both to our usefulness and gratification, that it would be in my opinion a highly dangerous experiment to confine our studies to geography, strictly so called.

The Geographical Society, be it recollected, traces its origin to an association of travellers rather than geographers; and we should ill deserve the liberality which was shown to us in the first instance by the African Society, and afterwards by the Palestine Association, if, in absorbing their funds, we had not also imbibed a portion of their spirit, and do not still endeavour to carry out the objects for which those funds were originally designed. Every encouragement, therefore, consistent with the means of the Society, has been held out for exploration and discovery. The medals placed in our hands by royal munificence have been constantly bestowed upon those who have signalised themselves by merit of this description; and we have unscrupulously admitted into our Journal a variety of intelligence which we thought would be interesting

to the public, without too nicely examining its relationship to the main purposes of our institution. In this course we have received the approval of her Majesty's government, and have obtained a degree of popularity which never could have been acquired had we been less latitudinarian.

In proof of the estimation in which the Society is held, I may refer not only to the extensive sale of our Journal, but also to the numerous applications (two of them I have already adverted to) which we have received from individuals, to travel under our auspices, and in compliance with our instructions, in distant and unexplored countries. The dangers and difficulties which formerly deterred men from such enterprises are fast disappearing, and the facility with which communication is now carried on throughout the globe tends greatly to invite a spirit of adventure. Extended experience also has shown that the risk has been not a little exaggerated. How trifling has been the loss of life in the several expeditions to the polar seas! Mr. Schomburgk's example has proved to us that, with prudence and temperance, an European may pass years in the burning forests of the Tropics, without any permanent injury to his constitution. Mr. W. I. Hamilton and others have wandered unscathed through large portions of Asia Minor, depopulated by the plague. Mr. Holman, though deprived of sight, has visited every quarter of the globe, and returned in safety to his native country to tell us of his manifold adventures.

Where loss of life and want of success have occurred, I believe it may be ascribed, in most instances, to the neglect of proper precautions, to inexperience, ignorance, carelessness, or a contempt for the opinions of others, even those best qualified to advise.

But, Gentlemen, I feel that I have already trespassed too long upon your time. I conclude, therefore, by thanking you for the attention with which you have honoured me, on an occasion upon which I could hardly have expected so indulgent an audience, and by expressing to you my earnest hope that, if it should be my fortune to address you on the next anniversary, I may then be enabled to announce to you discoveries of still higher interest, and bring before you still more conclusive evidence of your usefulness and success.